UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,641	08/01/2002	George Cheng	9330-US-375	2124

31561   7590   12/29/2004

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE
7 FLOOR-1, NO. 100
ROOSEVELT ROAD, SECTION 2
TAIPEI,   100
TAIWAN

EXAMINER
PHAM, TUAN

ART UNIT	PAPER NUMBER
2643	

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>07 October 2004</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-16</u> is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-16</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All   b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

REXFORD BARNIE
PRIMARY EXAMINER

REXFORD BARNIE
PRIMARY EXAMINER

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments with respect to claims 1-16 have been considered but are

moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Hsieh (U.S. Patent No.: 6,683,948) in view of Urry et al. (U.S. Patent No.: 6,195,029,

hereinafter, "Urry").

Regarding claims 1 and 4, Hsieh teaches a DTMF decoder that combines

software and hardware (see figure 1, col.3, ln.22-25), comprising:

an amplifier, used to amplify and reshape a DTMF signal and output an amplified

DTMF signal (see figure 1, amplifier 16, col.3, ln.11-25, it is obvious that the signal input

to the amplifier at a low frequency then the amplifier will amplify or change the

amplitude of the signal to a new waveform);

an analog to digital converter, coupled to the amplifier, used to convert the

amplified DTMF signal from analog to digital and output a digital DTMF signal (see

figure 1, A/D converter 17, col.3, ln.11-25); and

a CPU, coupled to the analog to digital converter, used to perform a digital

filtering on the digital DTMF signal to complete a decoding operation (see figure 3,

microprocessor 12, col.3, ln.11-38).

It should be noticed that Hsieh fails to clearly teach the analog to digital converter

has a precision level to preserve a frequency. However, Urry teaches such features

(see col.6, ln.57-67) for a purpose of preventing the high frequency signal from being

lost.

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to incorporate the use of the analog to digital converter

has a precision level to preserve a frequency, as taught by Urry, into view of Hsieh in

order to prevent the high frequency signal from being lost.

Regarding claims 2 and 5, Hsieh further teaches the DTMF decoder that

combines software and hardware wherein the amplifier comprises a non-invert terminal,

an invert terminal, and an output terminal (see figure 1, amplifier 16). It is inherently

that the amplifier should be included a non-invert terminal, an invert terminal, and an

output terminal).

Regarding claims 3 and 6, Hsieh further teaches the DTMF decoder that

combines software and hardware wherein the non-invert terminal couples to a first

terminal of a telephone line, the invert terminal couples to a second terminal of the

telephone line, and the output terminal outputs the amplified DTMF signal (see figure 1,

Tip and Ring, amplifier 16, col.3, ln.11-25). See explanation of claim 2.

Regarding claim 7, Hsieh teaches an operating method of a DTMF decoder that

combines software and hardware, comprising:

amplifying and reshaping a DTMF signal to output an amplified DTMF signal (see

figure 1, amplifier 16, col.3, ln.11-25, it is obvious that the signal input to the amplifier at

a low frequency and the amplifier will amplify or change the amplitude of the signal to a

different waveform);

converting the amplified DTMF signal from analog to digital to output a digital

DTMF signal (see figure 1, A/D converter 17, col.3, ln.11-25); and

performing a digital filter on the digital DTMF signal to complete a decoding

operation (see figure 3, microprocessor 12, col.3, ln.11-38).

It should be noticed that Hsieh fails to clearly teach the analog to digital converter has a

precision level to preserve a frequency. However, Urry teaches such features (see

col.6, ln.57-67) for a purpose of preventing the high frequency signal from being lost.

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to incorporate the use of the analog to digital converter

has a precision level to preserve a frequency, as taught by Urry, into view of Hsieh in

order to prevent the high frequency signal from being lost.

Regarding claim 8, Hsieh further teaches the operating method of a DTMF

decoder that combines software and hardware wherein the DTMF signal is amplified

and reshaped by an amplifier (see figure 1, amplifier 16, col.3, ln.11-25). It should be

understood that the amplifier 16 is amplifying the analog signal and reshaped the waveform from TIP and RING.

Regarding claim 9, Hsieh further teaches the operating method of a DTMF decoder that combines software and hardware wherein the amplifier comprises a non-invert terminal, an invert terminal, and an output terminal (see figure 1, amplifier 16). It is inherently that the amplifier should be included a non-invert terminal, an invert terminal, and an output terminal).

Regarding claim 10, Hsieh further teaches the operating method of a DTMF decoder that combines software and hardware wherein the non-invert terminal couples to a first terminal of a telephone line, the invert terminal couples to a second terminal of the telephone line, and the output terminal outputs the amplified DTMF signal (see figure 1, Tip and Ring, amplifier 16, col.3, ln.11-25). See explanation of claim 8.

Regarding claim 11, Hsieh further teaches the operating method of a DTMF decoder that combines software and hardware wherein the amplified DTMF signal is converted from analog to digital by an analog to digital converter (see figure 1, A/D converter 17, col.3, ln.11-25).

Regarding claim 12, Hsieh further teaches the operating method of a DTMF decoder that combines software and hardware wherein a digital filtering is performed on the digital DTMF signal to complete a decoding operation by a CPU (see figure 3, microprocessor 12, col.3, ln.11-38).

Regarding claim 13, Hsieh further teaches the operating method of a DTMF decoder that combines software and hardware wherein a digital filtering is performed on

the digital DTMF signal to complete a decoding operation by a digital logic operation

circuit (i.e., microprocessor) (see figure 3, microprocessor 12, col.3, ln.11-38).

4.   Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Hsieh (U.S. Patent No.: 6,683,948) in view of Urry et al. (U.S. Patent No.: 6,195,029,

hereinafter, "Urry") as applied to claim 1, 4, and 7 above, and further in view of Valimaki

et al. (U.S. Patent No.: 5,812,608, hereinafter, "Valimaki").

Regarding claims 14-16, Hsieh and Urry, in combination, fails to clearly teach

the analog to digital converter is between 4 bits and 8 bits. However, Valimaki teaches

such features (see col.3, ln.12-20) for a purpose of reducing the bit rate of the

information transmitted over communication link.

Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to incorporate the use of the analog to digital converter is

between 4 bits and 8 bits, as taught by Valimaki, into view of Hsieh and Urry in order to

cut cost for design the A/D converter with less number of bits.

Conclusion

5.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any response to this final action should be mailed to:
            Box AF
                  Commissioner of Patents and Trademarks
                  Washington, D.C. 20231
            or faxed to:
                  (703) 872-9314 (for formal communications; please mark
            "EXPEDITED PROCEDURE")
            Or:
                  If it is an informal or draft communication, please label
      "PROPOSED" or "DRAFT")

            Customer Service (703) 306-0377
            Hand-delivered responses should be brought to Crystal Park II, 2121

Crystal Drive, Arlington, VA., Sixth Floor (Receptionist)

6.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to **Tuan A. Pham** whose telephone number is

(703) 305-4987. The examiner can normally be reached on Monday through Friday, 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Curtis Kuntz can be reached on (703) 305-4708 and

IF PAPER HAS BEEN MISSED FROM THIS OFFICIAL ACTION PACKAGE, PLEASE CALL Customer Service at (703) 306-0377 FOR THE SUBSTITUTIONS OR COPIES.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have question on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Art Unit 2643
December 23, 2004
Examiner

Tuan Pham

REXFORD BARNIE
PRIMARY EXAMINER